

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An optical system of the type having an aperture for light to pass through and designed to collect and project a substantial amount of radiant flux from a quasi point source lamp as a substantially collimated radial beam comprised of:
 - a. a quasi point source lamp located on an optical axis;
 - b. a segmented radial disk located on said optical axis, said radial disk including parabolic or ellipsoidal radial segments having their focal points coinciding with said quasi point source; each of said radial segments being concave in the transverse section; and
 - c. a segmented reflector ring surrounding the quasi point source being disposed along the optical axis with one set of ring segments disposed to collect reflected beams from the segmented radial disk and another set of ring segments disposed to collect, collimate and direct light from the quasi point source, both sets of reflectors being canted in relationship to the optical axis so that both the reflected beams and ~~reflected~~ refracted direct light are projected in substantially the same radial plane away from the luminaire.
2. (original) An optical system as defined in Claim 1 wherein at least some of the reflective segments of the ring reflectors are convex.
3. (original) An optical system as defined in Claim 1 wherein at least some of the ring reflectors segments are concave.
4. (original) An optical system as defined in Claim 1 wherein at least some of the ring reflective segments are flat.
- 5 (previously presented) An optical system designed to collect and project a substantial amount of radiant flux from a quasi point source lamp as a substantially collimated radial beam comprising:
 - a. a quasi point source lamp located on an optical axis;
 - b. a radial disk located on said optical axis, said radial disk including parabolic or ellipsoidal radial segments having their focal points coinciding with said quasi point source on said optical axis;
 - c. a refractive ring including positive cylindrical lenses radially disposed about the optical axis refracting light rays from the quasi point source to the reflection disk;
 - d. a segmented reflector disk surrounding the quasi point source of which a portion of the segments are disposed to reflect and direct light received from the

reflector disk and another portion of the segments disposed to reflect and direct light received from the quasi point source.

6. (original) An optical system as defined in Claim 5 wherein the refractive ring includes collimating lens segments.
7. (original) An optical system as defined in Claim 1 wherein a conical lens at least partially covers the aperture of the luminaire.
8. (original) An optical system as defined in Claim 1 wherein a canted collimating ring lens is disposed around the optical axis to collimate a radial beam substantially parallel to the reflected beams.
9. (original) An optical system as defined in Claim 8 wherein the canted collimating ring lens is comprised of individually collimating segments.
10. (original) An optical system as defined in Claim 8 wherein the section of the canted ring lens is plano-convex.
11. (original) An optical system as defined in Claim 8 wherein the canted ring lens is double convex in section.
12. (original) An optical system as defined in Claim 8 wherein the canted ring lens is Fresnel in section.
13. (original) An optical system as defined in Claim 9 wherein the section of the canted ring lens is plano-convex.
14. (original) An optical system as defined in Claim 9 wherein the canted ring lens is double convex in section.
15. (original) An optical system as defined in Claim 9 wherein the canted ring lens is Fresnel in section.
16. (new) A luminaire designed to distribute light in a broad even pattern and provide sharp cutoff, comprised of an optical system designed to collect and project a substantial amount of light from a quasi-point source lamp, through an aperture, in the form of a canted radial substantially collimated beam comprised of:
 - a quasi-point light source located on an optical axis;
 - a reflector system at least partially surrounding said lamp and said optical axis, said reflector system having surfaces shaped to collect, collimate, and reflect light from the quasi-point light source, said surfaces being disposed at an angle to project a canted radial homogenous beam, through said aperture;
 - a lens at least partially covering said aperture that is shaped in such a manner as to not reflect acutely projected rays from the canted radial beam and therefore increase the efficiency of the luminaire.

17. (new) A luminaire as defined in claim 16 wherein the lens is conical in section.
18. (new) A luminaire as defined in claim 17 wherein the lens has a curved sectional shape.
19. (new) A luminaire as defined in claim 17 wherein the large diameter of the cone is substantially located in the plane of the aperture, the sides of the cone tapered inward toward the quasi-point light source.
20. (new) A luminaire as defined in claim 18 wherein the large diameter of the dome is substantially located in the plane of the aperture, the curved surfaces of said dome curving inward toward the quasi-point light source.
21. (new) A luminaire as defined in claim 16 wherein the lens has is comprised of at least two substantially concentric ring sections, an outer ring section having a wide diameter substantially located in the plane of the aperture, the sides of this section either straight or curved in section append inward and cant toward the quasi-point light source, forming a smaller diameter; the inner ring section, having a larger diameter that joins at its circumference with the circumference of the small diameter of the outer ring, have sides in section being curved or straight and append away from and form an enclosure around the quasi-point light source.
22. (new) A luminaire as defined in claim 1 wherein the reflector system is comprised of at least two distinct components, the combined reflection of both components producing a substantially homogenized canted radial beam.
23. (new) A luminaire as defined in claim 22 wherein at least one component is a reflector ring at least partially surrounding the optical axis.
24. (new) A luminaire as defined in claim 22 wherein at least one component is a disk surrounding and perpendicular to or at an obtuse angle to the optical axis.
25. (new) A luminaire as defined in claim 22 wherein at least one reflector component is comprised of sections.
26. (new) A luminaire as defined in claim 24 wherein a radial beam of light is reflected from the disk onto and further reflected by a reflective ring component.
27. (new) A luminaire designed to distribute light in a broad even pattern and provide sharp cutoff comprised of an optical system designed to collect and project a substantial amount of light from a quasi-point light source lamp through an aperture in the form of a canted radial substantially collimated beam comprised of:
 - a quasi-point light source located on an optical axis;
 - a reflector system at least partially surrounding said lamp and said optical axis, said reflector system having surfaces shaped to collect, collimate and reflect

light from the quasi-point light source, said surface being disposed at an angle to project a canted radial homogenized beam through said aperture; and
a canted collimating ring lens disposed around the optical axis to collimate a radial beam substantially parallel to the reflected beams.

28. (new) A luminaire as defined in claim 27 wherein rays from the canted collimating ring lens do not impinge on the reflector system.

29. (new) A luminaire as defined in claim 27 wherein the canted collimating ring lens is comprised of individual collimating sections designed to project a pattern such as a square or rectangle.

30. (new) A luminaire designed to collect and project a substantial amount of light from a quasi-point light source lamp through an aperture in the form of a canted radial substantially collimated beam comprised of:

a reflector system at least partially surrounding said lamp and said optical axis, said reflector system having surfaces shaped to collect, collimate and reflect light from the quasi-point light source, said surface being disposed at an angle to project a canted radial homogenized beam through said aperture;

a lens at least partially covering said aperture that is shaped in such a manner as to not reflect acutely projected rays from the canted radial beam and therefore decrease the efficiency of the luminaire; and

a canted collimating ring lens disposed around the optical axis to collimate a radial beam substantially parallel to the reflected beams.